A CASE OF MITRAL STENOSIS, WITH FEVER (NON-MALARIAL) OF RELAPSING TYPE.

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The title of this report is open to criticism, inasmuch as the fastigium of relapsing fever continues for a period of several days, whereas in the case I am about to discuss the acme of the fever was maintained for but a few hours. In employing the adjective relapsing I mean to imply a fever *recurring* at intervals of about one week, and, so far as I am aware, such a type of fever, in connection with endocarditis, has not been hitherto described. In a paper entitled "The Chronic Intermittent Fever of Endocarditis,"[1] Osler reviews the literature of the subject, mostly English, and finds one of the earliest references to it in Ormerod's Gulstonian Lectures, which were published in 1851. In this case there were two febrile paroxysms daily, and in all the reports with which I am acquainted the type of fever has been either quotidian, tertian, or, as in Ormerod's case, double quotidian. The rarity of the febrile type presented by my case has seemed to me sufficient warrant for its publication.

Margaret D., aged nineteen years, dressmaker, admitted January 21, 1899. Father living and well at the age of sixty-eight years; mother died at the age of thirty-two years of pneumonia. Has had four brothers and three sisters, of whom one brother and two sisters are living. The patient had typhoid fever three years ago; rheumatism in childhood; pneumonia a few months ago. She has lived in Philadelphia all her life.

Present Illness. About ten days before admission she began to feel weak and languid and disinclined to work, with headaches, pains in the back of the neck and back, and poor appetite. In addition there was anorexia, occasional nausea and vomiting, soreness in the abdomen, epistaxis, diminished excretion of urine, and cough. The menses have been suspended for two months. The patient is a fairly well nourished white female of average height. Her face is flushed, expression dull, eyes half closed, tongue lightly coated and tremulous; pulse 96, respirations 30, temperature on admission 99.2° F.

Physical examination revealed nothing abnormal except a typical presystolic murmur, low pitched, prolonged and rumbling, followed by short, sharp, first sound, the second sound being scarcely audible at the apex. The heart is but little if at all enlarged, the apex-beat being palpable in the fifth intercostal space within the mammary line.

On the day after admission the temperature became normal, and so continued until the 26th, five days later, when it began to rise. On the 28th, at 8 A.M., it reached 101.4° F.; on the 29th it was again normal, and remained so until February 4th (six days later), when it

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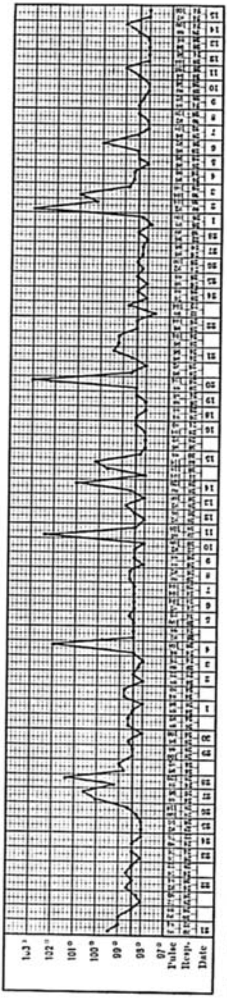
[1] Practitioner, 1893, vol. 1. p. 181.



suddenly rose at 8 A.M. to 102° F. Six days later, at 6 P.M., there was another ascent to 102.4° F. On the 20th it again rose at 8 A.M. to 103° F., slighter elevations having occurred on the 14th and 15th. On March 1st (at 8 A.M.) it again suddenly rose to 103° F., after which it continued normal.

The accompanying chart shows the character of the febrile movement much better than any verbal description. On two occasions the rise of temperature was accompanied with a chill, and in one with the vomiting of undigested food. Repeated examinations of the blood for the malarial organism gave negative results. The urine was free from albumin, sugar, and casts, and the liver was of normal size and apparently healthy in all respects. It is scarcely necessary to add that foci of suppuration were carefully excluded.

On March 25th the patient was examined in the clinic by my hospital colleague, Dr. Edward P. Davis, with special reference to the question of pregnancy. Dr. Davis concluded that the woman was pregnant.

The blood was examined on three occasions, the average of the three counts giving 2,705,000 red corpuscles per c.mm. and 20 per cent. of hæmoglobin. The leucocytes numbered 6000 per c.mm. A differential count of the latter was not made.

To recapitulate: The patient is a young, unmarried woman, pregnant, highly chlorotic, with well-marked though well-compensated mitral stenosis and fever, which may be styled recurrent, relapsing, or intermittent, but is certainly not malarial. The inference that the fever is dependent upon the heart lesion is based on the fact that no other cause for it could be found. This is the basis upon which rests the universally accepted opinion that the more regular types of intermittent fever and the continued fever associated with endocarditis are dependent upon the latter.

So far as I am aware, no theory has been advanced to explain the intermittency of non-malarial fever, such as that attending hepatic disorders, tuberculosis, endocarditis, etc. In discusing these intermittent fevers it should, I think, be borne in mind that in health there is a diurnal variation of the temperature, and that, as I demonstrated in the Cartwright Essay for 1881, diurnal elevation is coincident with a diminution in the number of the red blood-corpuscles and an increased elimination of urinary pigment—in short, that it corresponds with hæmolysis. As first pointed out by William Hunter, the occasional elevations of temperature in pernicious anæmia are also hæmolytic, as evidenced by their coincidence with a deeper discoloration of the skin, an excessive elimination of pathological urobilin, and a still further diminution in the number of red corpuscles. The condition, in short, is an exaggeration, or, rather, a perversion of what obtains in health. The intermittency of the malarial fevers is also conincident with a parasitic invasion and destruction of the red corpuscles; and with these facts to guide us I would suggest the probability of solving the problem of non-malarial intermittency by a careful study of the blood.

It might be suggested that the fever of my patient was due to the impoverished state of the blood; in other words, that it was the same in kind as the so-called anæmic fever of pernicious anæmia. In reply to such a supposition I would call attention to the fact that the characters of the blood were those of chlorosis, the percentage of red cells being more than double that of the hæmoglobin, and that febrile chlorosis is rarely met with. According to Huchard also, fever, when it occurs in chlorosis, is continuous.[1] It might, with equal propriety, be argued that the anæmia is the result of the valvular affection, for, as is well known, in endocarditis, especially of the ulcerative form, the anæmia is often intense. I recall a case of ulcerative endocarditis which I saw with the late Dr. James H. Hutchinson in which the anæmia was so profound and the cardiac murmur (mitral systolic) so soft that the diagnosis for a time vacillated between pernicious anæmia and ulcerative endocarditis. At the autopsy the left auriculo-ventricular orifice was almost occluded with vegetations, and most of the viscera contained numerous emboli.

The fact that my patient is still living and at present free from fever is no argument in favor of the view that this symptom was not etiologically connected with the valvular disease, but was due to some undiscovered ephemeral cause. I have purposely refrained from using the term "malignant" as applied to endocarditis, because I know of no dividing line, either clinical or bacteriological, that can be drawn between malignant and benign forms of that disease. The view that an ulcerative endocarditis is necessarily fatal is also disputed by

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[1] Sajous' Annual Univ. Med. Sciences, 1891, vol. ii.